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# REPORT TO
# THE REGIONAL MEETING
# OF
# MEALS-ON-WHEELS
# REGARDING
# A STUDY OF UNMET NEEDS

prepared by

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February, 1981

THE SOCIAL PLANNING and RESEARCH COUNCIL
of Hamilton and District

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Many people throughout the Region who provide leadership to the Meals-on-Wheels and Wheels-to-Meals programmes assisted in this study. To them, our many thanks.

Special thanks to Liz Bloomfield and Jim Hummel for their invaluable assistance in data collection and suggestions for analysis.

## INTRODUCTION

In December, 1979, the Board of Directors of the Social Planning and Research Council approved staff involvement in a project designed to assess the possible need for more meals provided by various Meals-on-Wheels and Wheels-to- Meals programmes operating in the Hamilton-Wentworth area.

This report outlines the findings of that study, and makes several recommendations regarding current needs and the need for more detailed study.

## METHODOLOGY

At the time the study began (March, 1980), there were four well-established Meals-on-Wheels programmes operating in the Hamilton-Wentworth region:

1) Meals-On-Wheels: Hamilton and Stoney Creek

   Administered by the Victorian Order of Nurses and operated out of St. Peter's Centre, this programme services all of Hamilton below the mountain and Stoney Creek. The programme has been in operation since 1966.

2) Meals-on-Wheels: Hamilton Mountain

   This programme is administered by the Macassa Lodge Outreach Programme and operates out of Macassa Lodge. It services all areas on Hamilton mountain south to Highway #53 and east to Mud Street.

3) Meals-on-Wheels: Waterdown

   Sponsored by the Waterdown and District Red Cross, this programme services the Waterdown and East Flamborough area, north to the Fifth Concession.

4) Meals-on-Wheels: Dundas

Operated by the Association of Dundas Churches, this programme services Dundas, out to Binkley Side Road, below the escarpment and up to Number 6 Highway.

Map A shows the areas services by these four programmes.

In addition to these four programmes, a Wheels-to-Meals programme also operates out of Macassa Lodge through their Outreach Programme.

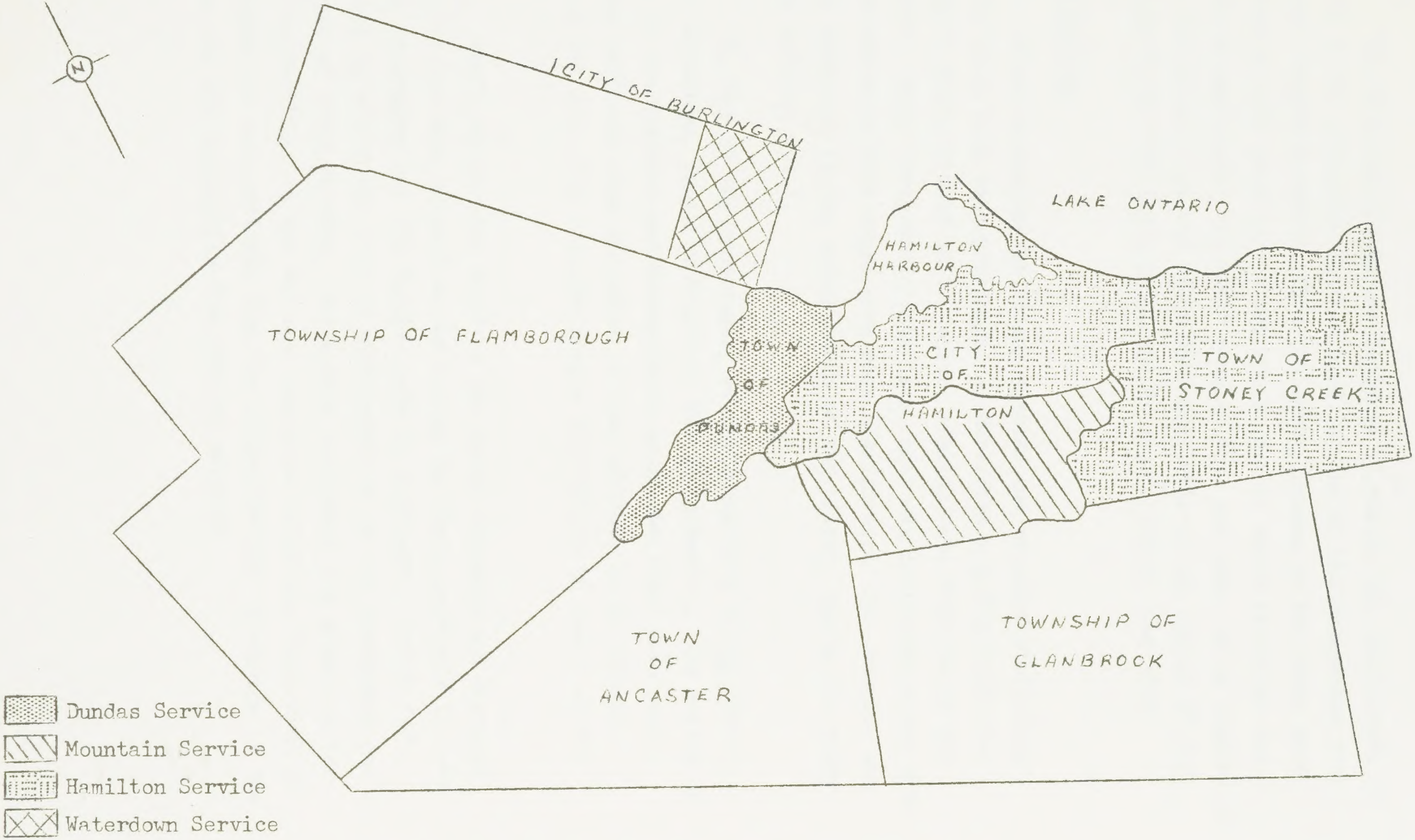
The original request for research by the Social Planning and Research Council from the Regional Meeting of Meals-on-Wheels included two specific information needs:

1) complete data re: meals served in the Hamilton-Wentworth region, including gaps in service in the country areas; and
2) the need for more meals.

There were two methods open to staff in meeting these needs: a collection of data from existing files and statistical analysis of this data, or a random sample survey of seniors in the region in order to assess whether their needs were, in fact, being met.

This latter method, while enabling a more accurate needs assessment, was a methodology which had to be ruled out due to the enormous amount of resources (both staff and financial) which would have been needed to carry it out. For this reason, the study was done through a thorough data collection from existing records and statistical analysis of that data.

MAP A: AREAS SERVICED BY MEALS-ON-WHEELS, 1979


N
CITY OF BURLINGTON
LAKE ONTARIO
HAMILTON HARBOUR
TOWNSHIP OF FLAMBOROUGH
TOWN OF DUNDAS
CITY OF HAMILTON
TOWN OF STONEY CREEK
TOWN OF ANCASTER
TOWNSHIP OF GLANBROCK
Dundas Service
Mountain Service
Hamilton Service
Waterdown Service

The data collection was designed to enable the development of a profile of the clientele who had used any one of the programmes over the period January-December, 1979 (which was chosen as the study year). By developing this profile, it was hoped that we could establish descriptions of particular "at risk" populations, and then, using population figures and projections and other data available to us, assess if and where gaps in service might exist and/or might develop over time.

## Data Collection

After reviewing the filing systems and recorded statistics available to us from each programme, we developed a coding form (see Appendix 1) which allowed us to collect similar data from all of the programmes. Basic demographic data (sex, age) was collected, along with other variables we felt might have some significance (for example, who made the referral, living arrangements of the client, reason for entry into the service, etc.).

In four of the programmes, we collected data on all clients (Dundas, Waterdown, Hamilton Mountain, Wheels-to-Meals). The number of clients in the Hamilton and Stoney Creek programme (666) made such a procedure difficult from the point of view of time, so we instead collected the data from a random sample (193 people in total) of the 666.

Staff and project staff at the Social Planning and Research Council did the data collection and coding for Meals-on-Wheels in both Hamilton programmes and the Wheels-to-Meals programme. Coding for Dundas and Waterdown was done by administrators of the programmes due to the nature of their records. While this introduced the potential for reduced reliability, it was the most practical solution, since much of the information was available from the administrators' knowledge of the clients, and not necessarily from written records.

In total, data on 499 people was collected for further analysis 193 of whom were a random sample from which conclusions regarding the total VON programme client population were derived.

## Initial Observations

Before beginning the statistical analysis of the data, several interesting points should be made.

### 1. Areas Serviced

As shown on Map A, there are large areas of the Region which were not serviced by any of the programmes: Ancaster, Glanbrook, portions of the east Mountain, and large areas of Flamborough. Since the time of the study, a Meals-on-Wheels programme has been started in Ancaster.

Upon inquiry, we determined that the Ancaster service does extend into rural Ancaster, but was being provided mainly within the town of Ancaster proper. This, therefore, represents service to an unserviced area at the time of the study.

There are still large areas of the Region which are not serviced. This will be discussed further in the conclusions of the report.

### 2. Weekend Service

Meals-on-Wheels in all cases is only provided five days a week (Monday to Friday), leaving clients responsible for weekend meals themselves. Consequently, clients must make arrangements for weekend meals. In some cases, there may be problems, but the extent of that problem can only be ascertained through a fairly rigorous survey of clients, a process which we were not equipped to undertake.

### 3. Rising Costs

Meals-on-Wheels programmes depend on volunteers for day-to-day operations. Some programmes pay their volunteer drivers mileage - others do not. It is worth noting, therefore, that the cost of providing the service (whether mileage is paid or whether the cost is absorbed by the volunteer) will increase as energy costs rise.

Meals varied in price from $1.25 to $1.30. As with gasoline, increasing food prices will tend to increase the cost of the service as well - something which should be kept in mind in the funding of these services.

## Profile of Clientele

### 1. Meals on Wheels

Tables 1, 2, 3 and 4 (percentages are based on those for whom data was collected and excludes missing data) provide client profiles of clients using each of the Meals-on-Wheels Programmes. The profile includes information on age, sex and living arrangement.

Although there are variations from programme to programme, there are certain characteristics shared by the clientele in each programme.

#### a) Age

In each programme, people over 80 form the largest group of users. This varies from 57.2% of the client population in Dundas to 35.3% of the client population in Waterdown. (In both Hamilton services, the percentage is around 50%.) In fact, there is clearly a trend towards increasing use as age rises.

#### b) Sex

In every programme, more women than men receive service. Hamilton/ Stoney Creek has 79% more women, Hamilton mountain has 61% more women, Dundas 100% more, and Waterdown 42% more.

It is not surprising, then, that older women represent a significant proportion of the clientele in each programme - certainly more so than men.

c) Living Arrangements

Throughout all four services, more than half (ranging from 50.1% to 73.2%) of the clientele live alone - either in their home or an apartment. Moreover, a consistently higher proportion of women live alone than men. Inversely, more men on the programmes live with a spouse.

Despite some variation, the Meals-on-Wheels programmes throughout the region are characterized by elderly users, particularly women, who live alone.

## TABLE 1: HAMILTON/STONEY CREEK MEALS-ON-WHEELS: CLIENT PROFILE

% Men: 35.8%

% Women: 64.2%

| Age | % of Men Using the Service | % of Women Using the Service |
|---|---|---|
| Under 60 | 6.0% | 1.6% |
| 60-64 | 1.5% | 4.1% |
| 65-69 | 13.5% | 5.0% |
| 70-74 | 9.0% | 16.7% |
| 75-79 | 24.0% | 25.9% |
| 80+ | 46.5% | 46.6% |

### As % of Total Clientele

| Age | Men | Women | Total |
|---|---|---|---|
| Under 60 | 2.1% | 1.1% | 3.2% |
| 60-64 | .5% | 2.7% | 3.2% |
| 65-69 | 4.8% | 3.2% | 8.0% |
| 70-74 | 3.2% | 10.7% | 13.9% |
| 75-79 | 8.6% | 16.6% | 25.2% |
| 80+ | 16.6% | 32.1% | 48.7% |

### Living Arrangements

| | Men | Women | Total |
|---|---|---|---|
| Alone | 58.2% | 81.7% | 73.2% |
| With Spouse | 28.3% | 12.5% | 18.2% |
| With Friend/Relative | 13.5% | 5.8% | 8.5% |

## TABLE 2: HAMILTON MOUNTAIN MEALS-ON-WHEELS: CLIENT PROFILE

% Men: 37.4%

% Women: 62.6%

| Age | % of Men Using the Service | % of Women Using the Service |
|---|---|---|
| Under 60 | 1.8% | 0% |
| 60-64 | 7.3% | 1.3% |
| 65-69 | 5.5% | 14.1% |
| 70-74 | 16.4% | 12.9% |
| 75-79 | 16.4% | 23.1% |
| 80+ | 52.7% | 48.8% |

### As % of Total Clientele

| Age | Men | Women | Total |
|---|---|---|---|
| Under 60 | 1.5% | 0% | 1.5% |
| 60-64 | 2.3% | .8% | 3.1% |
| 65-69 | 2.3% | 8.2% | 10.5% |
| 70-74 | 6.8% | 7.5% | 14.3% |
| 75-79 | 6.8% | 13.5% | 20.3% |
| 80+ | 21.8% | 28.6% | 50.4% |

### Living Arrangements

| | Men | Women | Total |
|---|---|---|---|
| Alone | 55.6% | 67 % | 62.9% |
| With Spouse | 41.1% | 27.7% | 33.1% |
| With Friend/Relative | 1.9% | 5.4% | 4.1% |

## TABLE 3: DUNDAS MEALS-ON-WHEELS: CLIENT PROFILE

% Men: 33.3%

% Women: 66.6%

| Age | % of Men Using the Service | % of Women Using the Service |
|---|---|---|
| Under 60 | 8.3% | 4.3% |
| 60-64 | 0% | 4.3% |
| 65-69 | 0% | 4.3% |
| 70-74 | 0% | 13.0% |
| 75-79 | 41.5% | 21.7% |
| 80+ | 49.8% | 51.9% |

### As % of Total Clientele

| Age | Men | Women | Total |
|---|---|---|---|
| Under 60 | 2.9% | 2.9% | 5.8% |
| 60-64 | 0% | 2.9% | 2.9% |
| 65-69 | 0% | 2.9% | 2.9% |
| 70-74 | 0% | 8.6% | 8.6% |
| 75-79 | 8.6% | 14.3% | 22.9% |
| 80+ | 22.9% | 34.3% | 57.2% |

### Living Arrangements

| | Men | Women | Total |
|---|---|---|---|
| Alone | 44.5% | 65.7% | 58.5% |
| With Spouse | 50.0% | 25.7% | 33.9% |
| With Friend/Relative | 5.6% | 8.6% | 7.5% |

## TABLE 4: WATERDOWN MEALS-ON-WHEELS: CLIENT PROFILE

% Men: 41.2%
% Women: 58.8%

| Age | % of Men Using the Service | % of Women Using the Service |
|---|---|---|
| Under 60 | 0% | 10% |
| 60-64 | 28.6% | 10% |
| 65-69 | 0% | 0% |
| 70-74 | 0% | 0% |
| 75-79 | 42.9% | 30% |
| 80+ | 28.6% | 40% |

### As % of Total Clientele

| Age | Men | Women | Total |
|---|---|---|---|
| Under 60 | 0% | 5.9% | 5.9% |
| 60-64 | 11.8% | 5.9% | 17.7% |
| 65-69 | 0% | 0% | 0% |
| 70-74 | 0% | 0% | 0% |
| 75-79 | 17.6% | 17.6% | 35.2% |
| 80+ | 11.8% | 23.5% | 35.3% |

### Living Arrangements

| | Men | Women | Total |
|---|---|---|---|
| Alone | 42.9% | 55.5% | 50.1% |
| With Spouse | 42.9% | 33.3% | 37.5% |
| With Friend/Relative | 14.3% | 11.1% | 12.5% |

## 2. Wheels-to-Meals

Table 5 presents the same set of characteristics for clients using the Wheels-to-Meals programme out of Macassa Lodge on the mountain.

### a) Age

As in the Meals-on-Wheels programmes, the service is dominated by use from the elderly, particularly those 80 years of age and over (49.3%).

### b) Sex

The tendency towards greater use by women is again replicated here, with women composing 70.1% of the users (the highest proportion of any of the programmes). What is interesting to note is that, in contrast to other programmes, the men using the programme are spread much more evenly across all the age groups, while women replicate the Meals-On-Wheels pattern of increasing use with increasing age.

### c) Living Arrangements

Unlike the Meals-on-Wheels programmes, there is a fairly even distribution among living arrangements by clients using the Wheels-to-Meals programme: 32.7% live alone, 26.9% live with their spouse, and 28.8% live with a friend or relative (you will recall that the Meals-on-Wheels programmes were dominated by clients living alone).

Within this distribution, however, women still tend (42.9%) to live alone, although 34.3% live with a spouse or friend. Most men (58.8%) live with a spouse. An important component of the Wheels-to-Meals programme is programming for social activities. Given the large proportion of clients living with someone (whether a spouse, relative, or friend), it is possible to suggest that some clients using Wheels-to-Meals do so not only for the meals, but for the additional social contact, particularly if their living companion is a friend, relative or spouse who may not always be at home.

## TABLE 5: MACASSA WHEELS-TO-MEALS: CLIENT PROFILE

% Men: 29.9%

% Women: 70.1%

| Age | % of Men Using the Service | % of Women Using the Service |
|---|---|---|
| Under 60 | 4.5% | 2.0% |
| 60-64 | 13.6% | 0% |
| 65-69 | 22.7% | 4.1% |
| 70-74 | 27.3% | 16.3% |
| 75-79 | 4.5% | 18.4% |
| 80+ | 27.3% | 59.2% |

### As % of Total Clientele

| Age | Men | Women | Total |
|---|---|---|---|
| Under 60 | 1.4% | 1.4% | 2.8% |
| 60-64 | 4.2% | 0% | 4.2% |
| 65-69 | 7.0% | 2.8% | 9.8% |
| 70-74 | 8.5% | 11.3% | 19.8% |
| 75-79 | 1.4% | 12.7% | 14.1% |
| 80+ | 8.5% | 40.8% | 49.3% |

### Living Arrangements

| | Men | Women | Total |
|---|---|---|---|
| Alone | 11.8% | 42.9% | 32.7% |
| With Spouse | 58.8% | 11.4% | 26.9% |
| With Friend/Relative | 17.6% | 34.3% | 28.8% |

## Client Profile Summary

Generally speaking, Meals-on-Wheels and Wheels-to-Meals programmes are characterized:

a) by high use from the elderly,

b) by heavier use (about 2 to 1) by women,

c) with the exception of Wheels-to-Meals, higher use by people living alone (Wheels-to-Meals clients are spread fairly evenly among living arrangement i.e. alone, with spouse, with friend or relative)

## Reasons for Service

Collection of data to determine why the services were being used was conditioned, to a large degree, by the information contained in client files. This information was somewhat limited - and in some cases, arbitrary - and assessments in client files of why service was requested were made by a variety of sources (the individual, the referring agency, the programme directors, et. cetera). Nevertheless certain interesting points emerge.

### a) Meals-on-Wheels

While a general pattern emerges (concentration of clients in "Elderly" and "Convalescent"), it should be noted that Dundas has a high proportion of convalescent clients.

When collecting the data, discriminating between "Elderly" and "Chronic" was difficult at times. The Hamilton/Stoney Creek files made this delineation, but on the Mountain, this was done on the basis of reading through the file for relevant data. "Elderly" meant a variety of things from "not coping well on her (his) own" to "seemed depressed, won't make own meals". "Chronic care" was sometimes difficult to determine e.g. if a client was not coping, but also had respiratory disease, she (he) was coded chronic care.

## TABLE 6: REASONS FOR ENTRY INTO MEALS-ON-WHEELS*

| Reason | Hamilton/ Stoney Creek | Hamilton Mountain | Waterdown | Dundas |
|---|---|---|---|---|
| Acute Care | - | 1 ( .6%) | 1 ( 6.3%) | 1 ( 1.9%) |
| Convalescent | 59 ( 8.9%) | 33 (20.8%) | 3 (18.8%) | 14 (26.4%) |
| Chronic Care | 255 (38.3%) | 47 (30.0%) | 4 (25.0%) | 11 (20.8%) |
| Elderly | 349 (52.4%) | 71 (44.0%) | 8 (50.0%) | 20 (37.7%) |
| Psychiatric | 3 ( .5%) | - | - | - |
| Missing data | - | 3 ( 1.9%) | - | 4 ( 7.5%) |
|  | 666 | 159 | 16 | 53 |

---

*The Hamilton/Stoney Creek figures have been projected from the sample.

Clearly, while daily contact with a Meals-on-Wheels driver is important in the maintenance of an outside social contact, the general thrust of the programmes, as reflected in the data above, is instrumental i.e. the provision of nutritious hot meals to those who, for various reasons, cannot prepare meals themselves. Referrals are not made into Meals-on-Wheels for specifically social reasons.

## b) Wheels to Meals

### TABLE 7: REASONS FOR ENTRY INTO THE WHEELS-TO-MEALS PROGRAMME
(n = 78)

| Reasons | % Clients |
|---|---|
| Needs Companionship | 60.3% |
| Needs Meals | 2.6% |
| On Other Programmes | 6.4% |
| Needs Hobbies | 2.6% |
| On Macassa Waiting List | 3.8% |
| Other | 17.9% |
| Missing Data | 6.4% |
| | 100.0% |

An overwhelming majority (60.3%) of clients entered the Wheels-to-Meals programme for social reasons. In contrast to the Meals-on-Wheels programme, while the instrumental goal of provision of meals is an important component of the programme, cited reasons for programme entry suggest that social goals are perceived as particularly important.

## Summary of Reasons for Entry

While provision of meals is an essential focus of both Meals-on-Wheels and Wheels-to-Meals, provision of meals is a more frequent reason for entry into Meals-on-Wheels than Wheels-to-Meals, which is characterized by a high percentage of clients entering the programme due to social needs.

## Referrals

### TABLE 8: REFERRAL SOURCES FOR MEALS-ON-WHEELS AND WHEELS-TO-MEALS

| | Meals-on-Wheels | | | Wheels-to-Meals |
|---|---|---|---|---|
| | Total (n=894) | Hamilton/ Stoney Creek (n=666) | Others (n=228) | (n=78) |
| Doctor | 78 ( 8.7%) | 52 ( 7.8%) | 26 (11.4%) | 3 ( 3.8%) |
| Hospital | 43 ( 4.8%) | 24 ( 3.6%) | 19 ( 8.3%) | 17 (21.8%) |
| St. Elizabeth/ V.O.N. | 172 (19.2%) | 145 (21.8%) | 27 (11.8%) | 4 ( 5.1%) |
| Homecare | 105 (11.7%) | 97 (14.6%) | 8 ( 3.5%) | 4 ( 5.1%) |
| Visiting Homemakers | 16 ( 1.8%) | 14 ( 2.1%) | 2 ( .9%) | - - |
| Public Health | 72 ( 8.1%) | 66 ( 9.9%) | 6 ( 2.6%) | 9 (11.5%) |
| Other Social Service | 19 ( 2.1%) | 10 ( 1.5%) | 9 ( 3.9%) | - - |
| Friend/ Relative | 60 ( 6.7%) | 14 ( 2.1%) | 46 (20.2%) | 17 (21.8%) |
| Church | 7 ( .8%) | 7 ( 1.0%) | - - | 1 ( 1.3%) |
| Self | 145 (16.2%) | 110 (16.5%) | 35 (15.4%) | 5 ( 6.4%) |
| Other | 124 (13.9%) | 117 (17.6%) | 7 ( 3.1%) | 11 (14.1%) |
| Missing Data | 53 ( 5.9%) | 10 ( 1.5%) | 43 (18.9%) | 7 ( 9.0%) |
| | 894 | 666 | 228 | 78 |

Although most referrals into both Meals-on-Wheels and Wheels-to-Meals come from similar sources, there are important differences in the proportion of clients being referred by particular sources. The most significant differences are:

a) the much higher proportion of Wheels-to-Meals clients referred from hospitals (often social work departments),

b) the higher percentage of referrals to Meals-on-Wheels from the V.O.N. and St. Elizabeth's Visiting Nurses,

c) the higher percentage of clients who self-refer to Meals-on-Wheels.

More generally, 42.9% of Meals-on-Wheels clients are referred from support services (St. Elizabeth's/V.O.N., Homecare, Visiting Homemakers, Public Health Nurses and Other Social Service Agencies) while only 21.7% of Wheels-to-Meals clients are so referred. This may, in fact, reflect the differing nature of the two programmes. Meals-on-Wheels is a support service provided in the hom, hence the higher "clustering" of referrals from other support services provided in the home.

In contrast, since Wheels-to-Meals is programme-oriented, there is a greater percentage of referrals from agencies (such as hospitals) which may be seeking a fuller programme, since they themselves are not providing services in the home.

## Fees

Almost all clients in both programmes pay standard fees (for example, only 2.3% of Meals-on-Wheels clients had their meals subsidized).

## Length of Time on Service

We were interested in determining the length of time clients use the services, since this information could be used to help determine future need for meals. We did this by computing the number of days people had been using the service, and then transformed this information into different categories of months.

### a) Meals-on-Wheels

By the end of 1979, those who had used Meals-on-Wheels at any point during the year had used the service for the following lengths of time:

TABLE 9: MEALS-ON-WHEELS: LENGTH OF TIME ON SERVICE (Discharged and Long Term Clients)*

| | % Clients |
|---|---|
| Up to 1 month | 29.7% |
| 2 to 3 months | 29.7% |
| 4 to 6 months | 8.2% |
| 7 to 9 months | 3.4% |
| 10 to 12 months | 4.7% |
| 1 year or over | 24.1% |

(n=319)

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*Explanatory Note: This Table provides information on all clients who were receiving service at the beginning of the year OR all those who came on and went off the service during the study year. Those who came on the service but who were not discharged during the study year, of course, cannot have lengths of service computed. Long term client refers specifically to clients who were on service at the beginning of the year and at the end i.e. at least one year on the service.

From the figures in Table 9, it is clear that the majority of clients using Meals-on-Wheels are either on the service for the short term (50.4% of the clients used the service for less than three months), or long term (27.6% used the service for more than 1 year). Clearly, this indicates two trends in use: long term maintenance, and another group with a reasonably high turnover.

This is useful information because it can be used in predicting the growth and shape of service. (It is worth noting that we were unable to determine what factors might lead to short VS long term use of service using the data we had collected.)

It is possible to use similar figures to arrive at an approximate number of meals being served in the region. See Table 10.

TABLE 10: LENGTH OF TIME ON SERVICE (MEALS-ON-WHEELS)

| | % of Clients |
|---|---|
| 1-30 days (up to 1 month) | 24.5% |
| 31-93 days (1-3 months) | 24.6% |
| 94-182 days (4-6 months) | 11.9% |
| 183-276 days (7-9 months) | 8.3% |
| 277-364 days (10-12 months) | 8.7% |
| 1 year or longer | 21.6% |

(n=894)*

---

*This Table provides information on all clients, whether discharged or not.

NOTE: These % based on the total population of Hamilton/ Stoney Creek clients projected from the sample.

Table 10 includes clients who were not discharged as of December, 1979. From this Table, it is possible to determine approximately the number of meals served in the Region in 1979.

## Number of Meals Served

An average of 4.044 meals per client per week were received in 1979. Using this figure, we estimated meals in the following way.

The median (mid-point) of each length of service category was determined in days, weekends removed, and then multiplied by the number of clients and the average number of meals per client per day (.808).

For example, for 1-30 days:

median of 1-30 days = 15.5 days
number of weekends = 2
therefore subtract = 4 days
to arrive at 11.5 days of service

∴ (see Table 10) 24.5% of 894 clients = 219 clients
AND
219 clients x 11.5 days of service x .808 meals
= 2,035 meals.

This process, when completed for each length of service category, results in Table 11.

TABLE 11: ESTIMATED MEALS

| | |
|---|---|
| Up to 1 month | 2,035 |
| 1-3 months | 8,263 |
| 4-6 months | 8,596 |
| 7-9 months | 9,923 |
| 10-12 months | 14,611 |
| 1 year | 40,723 |
| TOTAL | 84,151 |

The V.O.N. estimated in 1979 that 1,645 meals per week were being served in the Region (or 85,540 per year). Our total of 84,151 meals per year is very close, and differences can probably be accounted for by our rounding and averaging of figures in the computations. A difference of 1,389 is not worrisome, and, in fact, we can say with confidence that about 85,000 meals were served in the Region in 1979.

This is important as a methodology because it can be used against population projections in looking at future need.

## Utilization Rates

Using the data collected, we geo-coded clients by Census Tract in the Hamilton and Dundas areas (we were unable to do so for the Waterdown service due to a lack of recorded addresses in the coding). Map B shows the Census Tracts, and Dundas (composed of two Census Tracts) was treated as a single unit.

Using 1979 assessment rolls, we were able to determine utilization rates per 1,000 population for all Census Tracts, and in a few

instances, for several Census Tracts together (necessary because assessment rolls are done on the basis of planning neighbourhoods, a few of which comprise several Census Tracts).

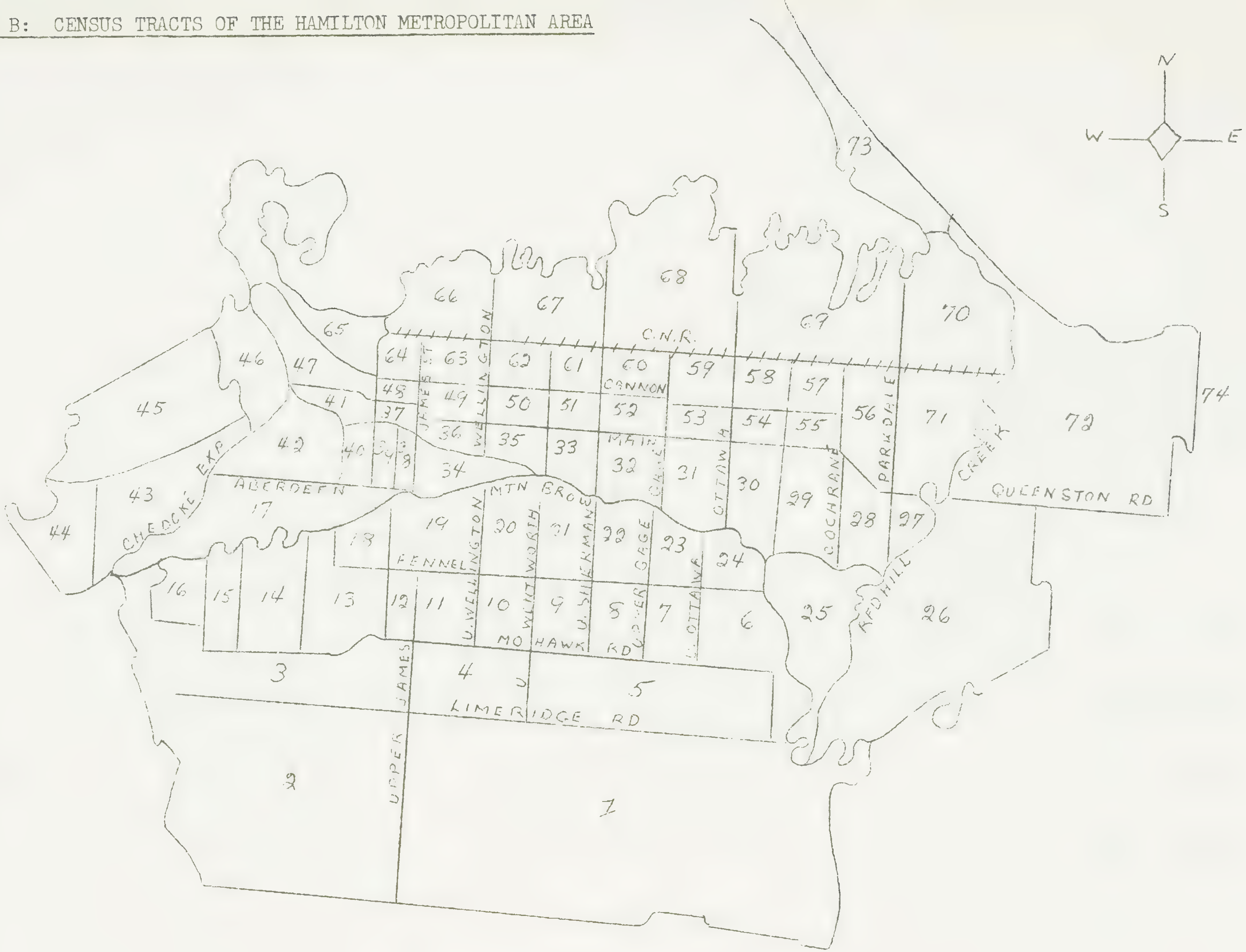
a) Hamilton

Map C indicates the distribution of utilization rates throughout Hamilton. Utilization rates vary from 0 to 15.8 per thousand population.

b) Dundas

Dundas had a utilization rate of 2.76

## MAP B: CENSUS TRACTS OF THE HAMILTON METROPOLITAN AREA


N
W
E
S
C.N.R.
CANNON
MAIN
MTN BROW
ABERDEEN
CHEDOKE EXP
FENNEL
MOHAWK RD
LIMERIDGE RD
UPPER JAMES
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U. SHERMAN
GAGE
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COCHRANE
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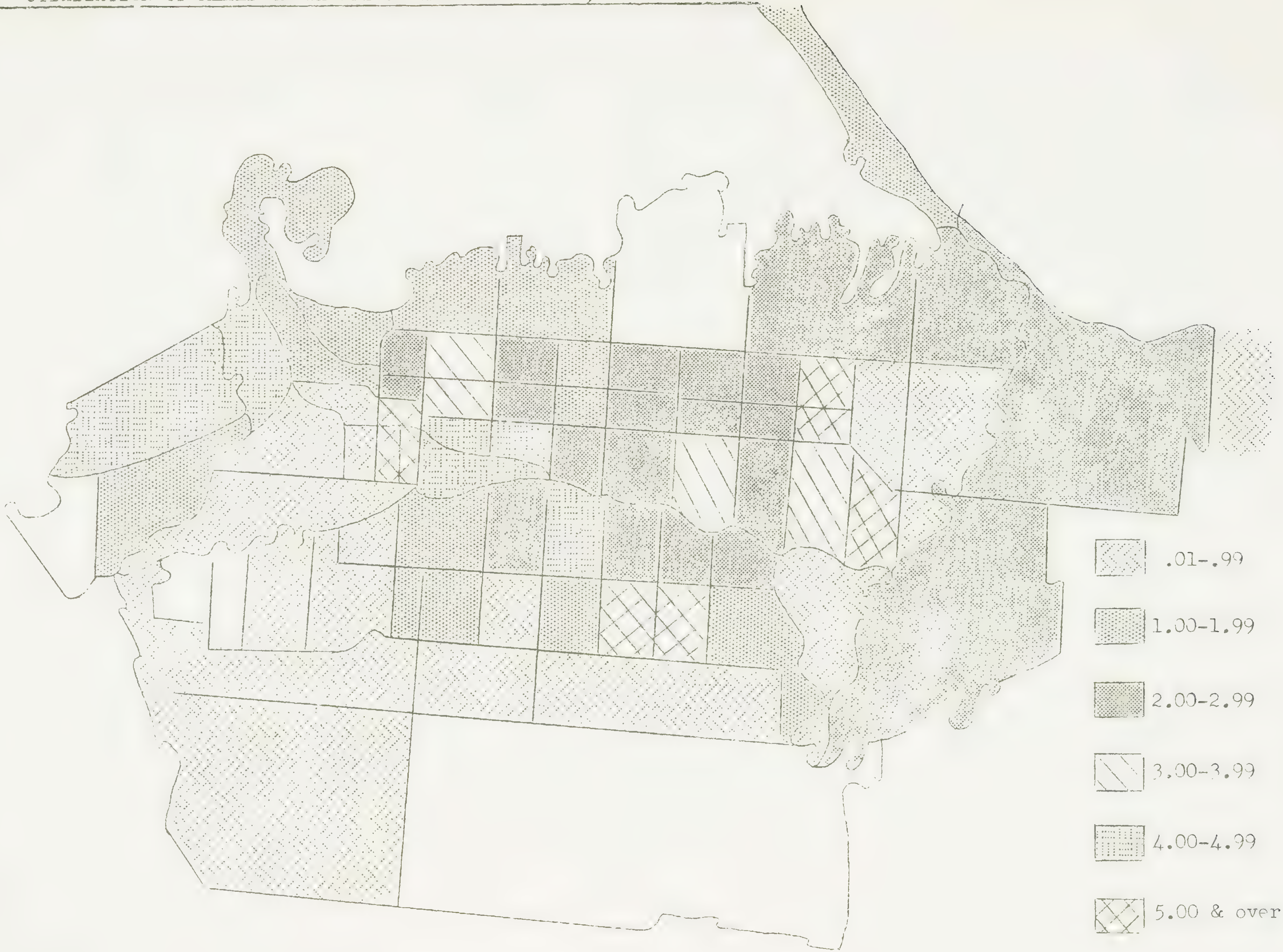
MAP C: UTILIZATION OF MEALS-ON-WHEELS IN HAMILTON PER 1,000 POPULATION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1.00-1.99
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3.00-3.99
4.00-4.99
5.00 & over

## Projection of Potential Utilization Rates

With these utilization rates established, we then decided to do some statistical procedures which would permit us to predict utilization rates.

Given the current level of utilization, it is possible to look for factors which might help predict utilization of service. Using a method called multiple regression, it is possible to use one set of variables to predict another variable. That is, some of the variance or change in one variable (in this case, utilization rates) can be predicted using other variables.

We were fortunate in that the Social Planning and Research Council was (at the time of our study) conducting research using utilization rates and data from the Census in order to develop some predictive models of social service agency use (this study will be referred to as GACSU). We were able to tie into this research and use some of their research results, adding to the strength of our approach.

We took a set of measures from the 1976 Census, which were broken down into Census Tracts, and used the standard SPSS multiple regression programme in order to:

1. see how much variance in utilization from Census Tract to Census Tract could be explained by these other variables, and,
2. make some predictions regarding utilization from Census Tract to Census Tract.

The variables we used were:

1. persons aged 65 and over as a percent of total population (1976 Census);
2. average number of persons per household (1976 Census);

3. number of single attached dwellings as a percent of total dwellings (1976 Census);
4. average individual income, 1976;
5. % of families with 3 or more children in the family (1976 Census);
6. rented dwellings as a percent of total dwellings (1976 Census)
7. number of non-family households as a percent of total households (1976 Census);
8. number of apartments as a percent of total dwellings (1971 Census)

Each of these variables (except the % of families with more than 3 children) were later verified by GACSU as helping to predict the variance in utilization rates from Census Tract to Census Tract. Together, these variables were able to account for 68.4% of the variance or change in utilization rates from Census Tract to Census Tract ($r^2$ = .68372). Of these variables, the GACSU study pointed to the percentage of seniors as providing the greatest predictive value for utilization rates ($r^2$ = .67, and a causal variance of almost 64%).

It is important to note that predicting variance is not the same as explaining a causal relationship, although the GACSU study indicates that 64% of the causal variance in utilization rates can be explained by the percentage of seniors. 68.4% of the variance in utilization rates accounted for by the variables listed above is very high by most research standards. It seemed appropriate, therefore, to use these variables to develop a series of predictions of what the utilization rates for Census Tracts should be on the basis of the variables outlined above.

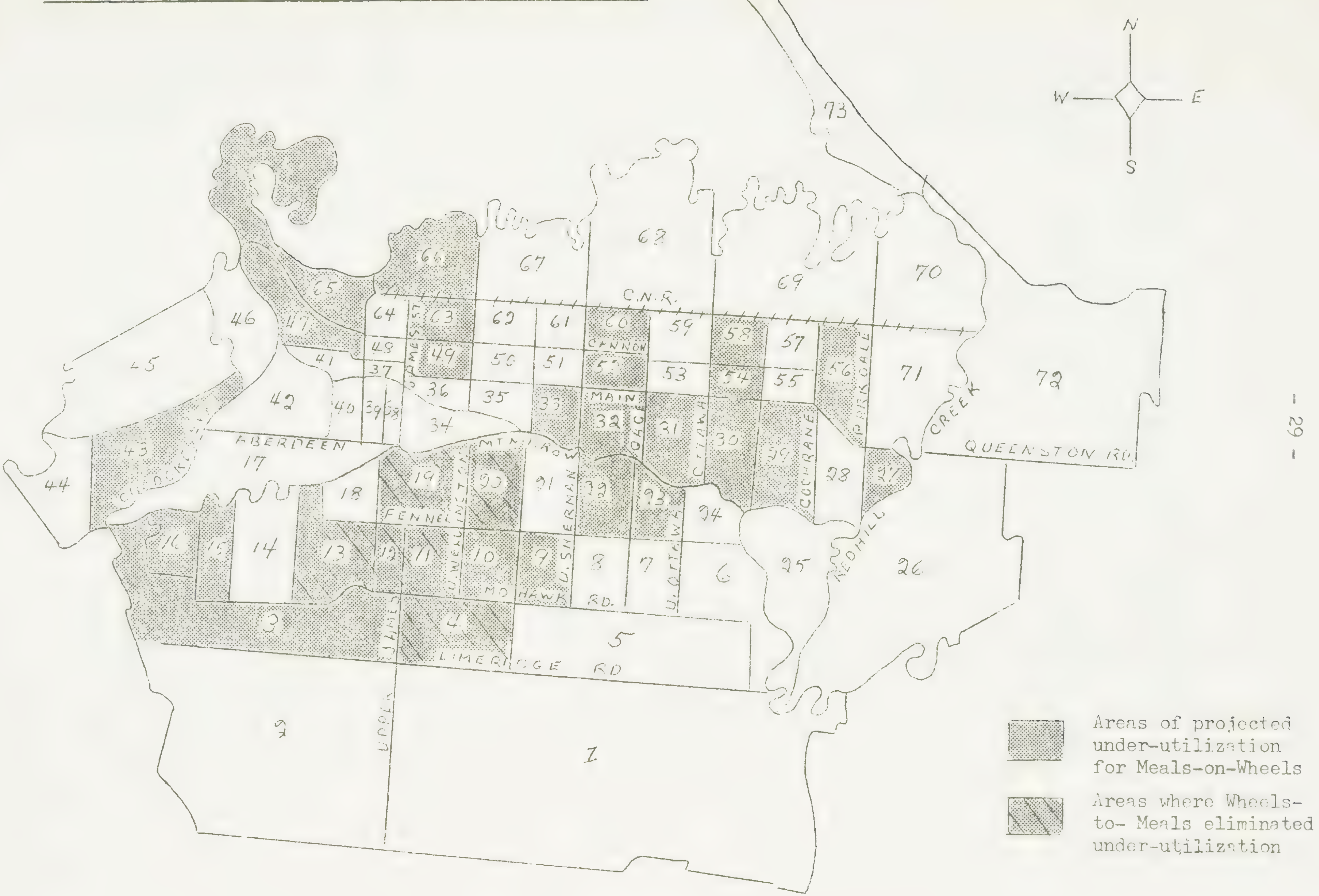
This was accomplished through an option in the SPSS multiple regression programme which develops estimates of the dependent variable (Y estimates) - in this case, utilization rates. This method results in a series of predictions of over- and under-utilization which are grouped about the average utilization rate. Therefore, we ended up with 25 areas (Census Tracts) of projected under-utilization and 26 areas of projected over-utilization.

(A brief note regarding over-utilization. This is a statistically derived over-utilization based on predictor variables which account for 68% of the variance. In practice, it seems logical to assume that these areas *do not have* service over-utilization. Other variables which we could not account for *do* feed into demand and utilization, and use may approximate need in these areas. What we *are* interested in are those areas where, given the predictor variables we *do* have, utilization still does not reach predicted levels.)

Map D indicates those Census Tracts where under-utilization was predicted. Under-utilization rates ranged from .33 per thousand population to 2.87 per thousand population (see Table 12, page 30).

These areas would be the natural choice for further investigation as to unmet need, but we feel relatively secure in suggesting that, in fact, there is a high probability of unmet need in these areas.

MAP D: PROJECTED UNDER-UTILIZATION OF MEALS-ON-WHEELS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FENNEL
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U. OTTAWA
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Areas of projected under-utilization for Meals-on-Wheels
Areas where Wheels-to- Meals eliminated under-utilization

## TABLE 12: UNDER-UTILIZATION RATES BY CENSUS TRACTS

| Census Tract | Under-Utilization Rate | Census Tract | Under Utilization Rate |
|---|---|---|---|
| 3 | .38 | 30 | 2.39 |
| 4 | .39 | 31 | .68 |
| 9 | .44 | 32 | 2.06 |
| 10 | 1.61 | 33 | .39 |
| 11 | .13 | 43 | 1.10 |
| 12 | 2.05 | 47,65 | .37 |
| 13 | .73 | 49 | 1.91 |
| 19 | .57 | 52,60 | .54 |
| 20 | 1.17 | 54,58 | 1.26 |
| 22 | .75 | 56 | 2.87 |
| 23 | 1.75 | 66 | .85 |
| 27 | .33 | 74 | .65 |
| 29 | 2.34 | | |

Mean Utilization Rate = 2.57 per thousand population

If we would like to determine projected meals using projected utilization, it is necessary to transform these figures.

To do this, we sum the utilization rates of Census Tracts which did not show under-utilization, and the project utilization rates of those Census Tracts which did, and find the mean. (Waterdown is not included in this analysis, but added in later.) Using this method, we arrive at a mean projected utilization rate of 3.04 per thousand. This translates, using current population figures for Hamilton and Dundas, into projected use by 989 people in 1979. To this we add Waterdown use by 16 people to arrive at a total projected use by 1,005 people.

If we assume a similar distribution of this projected population in terms of the length of service which was actually observed in 1979, we can use the distribution in Table 10 to predict the number of meals this would have meant. 24.5% or 246 people would have used the service for 1-30 days; 247 people for 1-3 months; 120 people for 4.6 months; 83 people for 7-9 months; 87 people for 10-12 months, and 217 people for the entire year. Using the method outlined in "Number of Meals Served" (page 21), we can project the number of meals as 94,300. This is approximately 10,000 more meals than were actually served in 1979.

However, before summarizing, it is necessary to take into account the impact that the Wheels-to-Meals programme has on these utilization rates.

## Addition of Wheels-to-Meals to the Analysis of Utilization Rates

By adding the users of the Wheels-to-Meals programme to the Meals-on-Wheels programme, new utilization rates can be constructed and compared to Table 12 to see if under-utilization is significantly affected. (see Table 13, page 32)

What Table 13 indicates is that only 6 of the 13 Census Tracts which showed under-utilization of Meals-on-Wheels and where Wheels-to-Meals were used met or exceeded their predicted utilization rates when Wheels-to-Meals use was added into utilization rates. This means that 19 Census Tracts are still predicted as having under-utilization.

## TABLE 13: NEW UTILIZATION RATES WITH WHEELS-TO-MEALS USE ADDED

| Census Tract | Number of Meals-on-Wheels Users | Population Total | Utilization Rate/1000 population | Rate of Under-Utilization | Number of Wheels-to-Meals Users | New Utilization Rates | Is Projected Utilization Rate Met? |
|---|---|---|---|---|---|---|---|
| 3 | 11 | 19,036 | .58 | .38 | 4 | .78 | NO |
| 4 | 3 | 6,887 | .44 | .39 | 3 | .87 | YES |
| 10 | 1 | 3,804 | .26 | 1.61 | 2 | .79 | NO |
| 11 | 3 | 2,812 | 1.07 | .13 | 2 | 1.8 | YES |
| 12 | 2 | 1,896 | 1.05 | 2.05 | 5 | 3.7 | YES |
| 13 | 1 | 3,705 | .27 | .73 | 3 | 1.1 | YES |
| 19 | 11 | 4,129 | 1.07 | .57 | 1 | 2.9 | YES |
| 20 | 19 | 4,568 | 2.66 | 1.17 | 1 | 4.4 | YES |
| 22 | 13 | 5,495 | 2.54 | .75 | 2 | 2.7 | NO |
| 23 | 8 | 2,805 | 2.37 | 1.75 | 2 | 3.6 | NO |
| 32 | 7 | 3,312 | 2.11 | 2.06 | 1 | 2.4 | NO |

(Out of a total of 25 under-utilized areas)

## Meals-on-Wheels vs Wheels-to-Meals Utilization

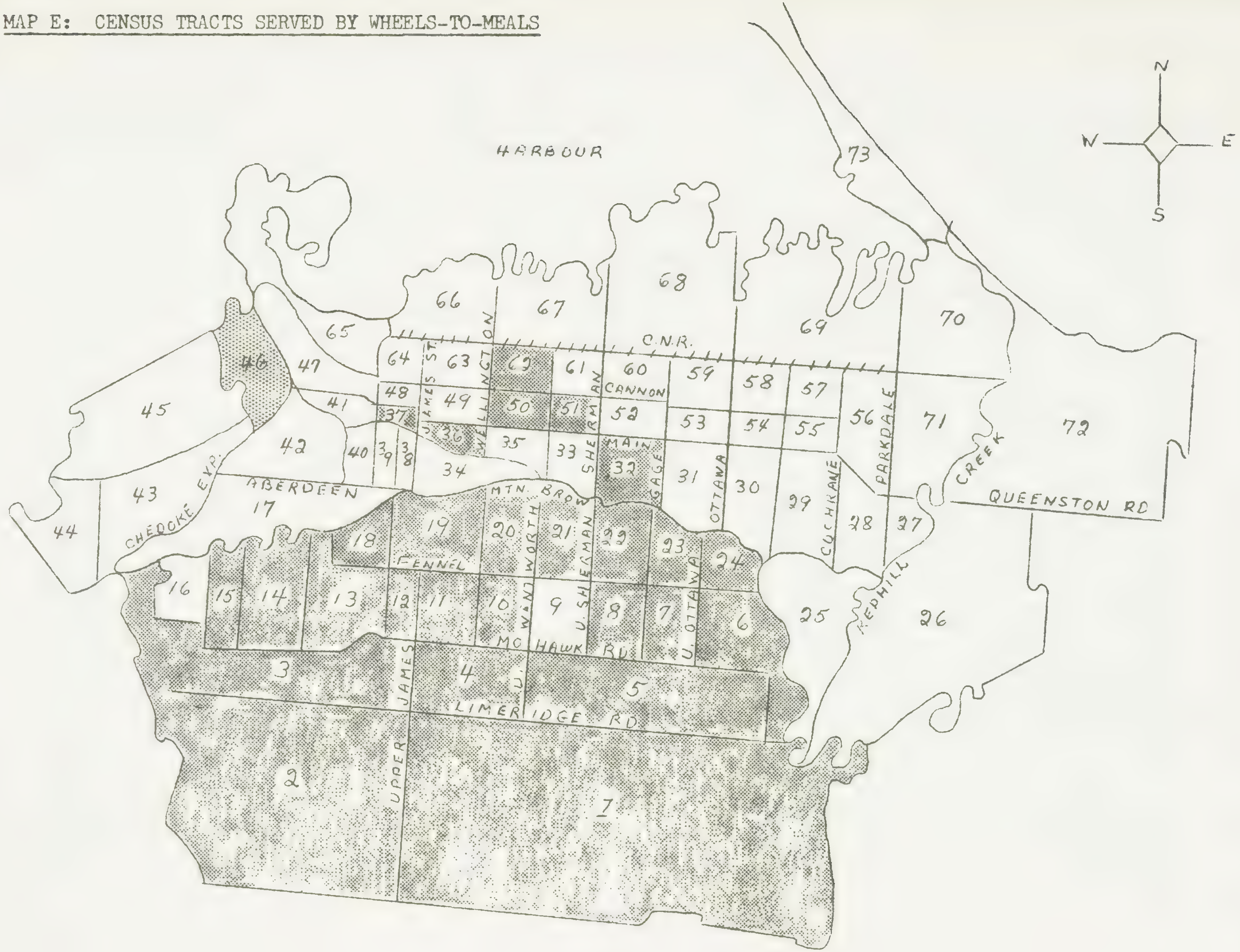
It is important to note that utilization of these two services is quite different. (You will also remember the comparisons on users made earlier.) To begin, there are far fewer users of Wheels-to-Meals - only 78 in total in 1979. This may be due to the relative newness of the Wheels-to-Meals programme, and also, in large part, by the constraints imposed by the number of clients which Macassa Lodge can handle at any one time. Secondly, while Meals-on-Wheels clients use an average of 4 meals per week, Wheels-to-Meals clients use the programme on an average of 1.74 times per week, with one-third (33.3%) of the clients using the service only once a week.

Map E indicates the distribution of Wheels-to-Meals in terms of those Census Tracts which were serviced by the programme. The large area covered leads to the interesting observation that such a wide area is serviced by one central location, despite the need for transportation of clients to this location. Table 14 indicates the type of transportation used by Wheels-to-Meals clients to get to Macassa Lodge.

TABLE 14: METHOD OF TRANSPORTATION USED BY WHEELS-TO-MEALS CLIENTS

| | Number | | |
|---|---|---|---|
| DARTS | 6 | ( 7.7%) | |
| TAXI | 2 | ( 2.6%) | |
| BUS | 1 | ( 1.3%) | |
| PRIVATE | 9 | (11.5%) | 50% |
| MACASSA VAN | 30 | (38.5%) | |
| WALKS | 1 | ( 1.3%) | |
| OTHER | 1 | ( 1.3%) | |
| NO ANSWER | 28 | (35.9%) | |
| | 78 | | |

## MAP E: CENSUS TRACTS SERVED BY WHEELS-TO-MEALS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QUEENSTON RD
REDHILL
ABERDEEN
CHEDOKE EXP.
MTN. BROW
FENNEL
WENTWORTH
U. SHERMAN
U. OTTAWA
MOHAWK RD.
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Fifty percent of the clients either made their own arrangements or used the Macassa Lodge van. This would tend to indicate that with one vehicle operating, a substantial area could be serviced by a centralized Meals-to-Wheels programme wherever located. Clearly, in rural areas with large areas to be serviced, Wheels-to-Meals potentially offers an attractive resolution to the need for meals as well as social contact.

## Summary of Projected Utilization

Our analysis indicates strongly that, in 1979, at least 19 Census Tracts in the Hamilton area were probably underserviced. Using projected utilization rates, it is estimated that approximately 10,000 additional meals in the region (specifically within the Hamilton area) may have been needed.

As stated before, our predicted utilization rates may not be entirely accurate, but we feel confident in suggesting strong possibility of under-servicing in these areas. Certainly, the evidence points to these areas as prime target areas for a much more detailed needs assessment.

## Benchmarks

Our research suggests need along several dimensions:

1. under-utilization in serviced areas;
2. areas where there is no service;
3. programme constraints.

In terms of trying to develop benchmarks, each of these problem areas can be examined separately.

### 1. Under-utilization

If we assume the projected utilization rates are reasonably accurate, we arrive at a mean utilization rate of 3.04 per thousand

population. This can be roughly transformed into a rate per 100 seniors (defined here as 65 years of age and over).

Since 92% of clients in 1979 were 65 years of age and over, we can use this 92% to accomplish this transformation. Since this mean projected use was determined on the basis of Hamilton and Dundas, it is appropriate to apply the transformation to Hamilton and Dundas population figures. Total population of these areas in 1979 was 325,543. Projected use would be 325,543/1,000 x 3.04 = 990 people. If 92% of those people were seniors, 910 users would be seniors. With a seniors population in Hamilton and Dundas of 37,261, this means a user rate of 910/37,261 = 2.4 per hundred seniors.

This can be translated into meals for comparison against yardsticks available from other countries. The V.O.N. provided to us a British yardstick of 200 meals per week per 1,000 seniors. If we transform our projected 2.4 users per hundred seniors into meals using the methodology outlined in the section "Number of Meals Served", we arrive at a figure of 85,506 meals per year or 1,644 meals per week being served. This can be transformed into 44 meals per 1,000 seniors (1,644/population of seniors of 37,261). This clearly falls well below the British yardstick.

However, if we apply the criteria of 75 years and over for seniors, we arrive at projected meals of 61,299 per year or 1,179 meals per week. Per thousand seniors (75 and over), the rate would then be 1179/population of seniors of 15,075 = 78 meals per 1,000 seniors.

Either of these projected figures could be applied to population projections to predict the uptake in use. However, these figures have only been used for Hamilton and Dundas, and would be modified for the Region.

For example, if we assume that the projected 3.04 users per 1,000 population can be applied to the Region, we arrive at higher figures. The population of Hamilton-Wentworth in 1979 was 408,228. Mean usage of 3.04 people per thousand would mean 1,241 people using the programmes. Assuming 92% of these people to be seniors (65 and over), 1,142 seniors would use the programmes. Since there were 43,050 seniors in the Region in 1979, the projected rate of use would be 1,142/43,050, or 2.7 seniors per every 100 seniors.

This can be translated into meals per week using methodologies outlined before. At this rate, an estimate of 107,305 meals per year or 2,064 meals per week is projected. This transforms into 48 meals per week per thousand seniors.

If we use this figure, we can apply it to projected population figures to arrive at future need. For 1991, projected use would be on the basis of a projected seniors population of 48,635. Use is estimated at 2,334 meals per 1,000 seniors. Even in 1979, projected use of 2,064 meals is well above supply. This, of course, is because these figures have been done on the basis of projected utilization. Another factor to bear in mind is that the figures in this section exclude use by non-seniors. If they are included, projected meals would be greater.

Given that projected use, if predicted under-utilization was met, is derived from 4 of the 5 services, we feel reasonably confident in applying the rate 3.04 users per thousand population to the Region. This rate can then be used to determine more specific information needs from area to area.

We feel, however, in spite of confidence regarding projected utilization, that a thorough needs assessment should be done, targeted to those areas we have identified as probably underserviced.

## 2. Areas Where There is No Service

Areas in Flamborough, and the whole of Glanbrook, plus others (see Map A) do not receive service at all. In the section above, the projection to the Region takes this into account, projecting demand in all areas.

We were unable, due to time constraints, to do any analysis as to quantification of potential demand in un-serviced areas. However, our research has very clearly indicated that the existence of seniors in any concentration will probably suggest a concurrent demand. We would certainly advise, therefore, that non-serviced areas be surveyed for need.

## 3. Programme Constraints

Early in the report, we suggested some barriers to service, particularly in the areas of weekend service and increasing costs. We would like to underscore these features again, and add a note regarding at-risk populations.

Our research indicates that the more elderly, often women, who are living alone comprise the largest user group. When combined with knowledge regarding referral patterns, it is possible that there is a risk of at-risk clients not being identified. Preliminary research conducted by S. Cowley at St. Joseph's Hospital (Community Service Needs of the Post Discharge Elderly Patient) revealed that of 727 elderly people (all of whom had been discharged without referral to support services) contacted in this preliminary study, 47 of the 544 people who responded (8.6%) either experienced problems or had care givers who experienced problems with meals. Since they were not referred to support services upon discharge, important referral points (other support services) into the Meals-on Wheels programme were missed. This suggests an important referral point which might be used to assist at-risk clients in obtaining needed meals.

# SUMMARY

This study has profiled the users of Meals-on-Wheels and Wheels-to-Meals, and, through statistical analysis, has attempted to determine where expansion of meal services may be needed.

## Clients

An at-risk population of the elderly, in large part women, often living alone has been identified as an at-risk population.

## Need for More Meals

Regression analysis and prediction allowed the identification of specific geographic areas in the City of Hamilton where there is a high probability of unmet need.

In addition, unserviced areas were identified.

On the basis of these projected utilization rates, a total projected rate of 3.04 users per thousand was developed (using Hamilton and Dundas data, which incorporated all but the Waterdown service). From this, it was possible to derive various other projected rates:

a) 2.4 users per hundred seniors (65+) in Dundas in Hamilton

b) 44 meals per week per 1,000 seniors (65+) in Dundas and Hamilton

c) 78 meals per week per 1,000 seniors (75+) in Dundas and Hamilton

d) applied to the Region, projected mean use of 3.04 people per thousand becomes 2.7 seniors per every 100 seniors (65+) in the Region, or 48 meals per thousand seniors.

We feel that this final figure of 3.04 users per thousand can be used in tentatively assessing service demand and use. However, it should be used with some caution, due to the rather unique use of predictors, and should, in our estimation, be followed by needs assessment work in targeted areas.

We do think there is a clear indication of a need for more meals, but it is the extent of that need which requires firming up.

# RECOMMENDATIONS

Since this study was requested by service providers, the recommendations below are directed particularly to them.

We feel confident that a need for more meals is demonstrated in this study. In that regard, we would recommend:

a) ALERTING APPROPRIATE AGENCIES AS TO THE NATURE OF AT-RISK CLIENTS SO PROPER REFERRALS MAY BE ASSISTED.

However, the nature of our study, with its unique use of prediction equations should be used only tentatively in arguing for the provision of any specific number of meals. This could best be done through follow-up study.

b) WE WOULD RECOMMEND THAT A NEEDS ASSESSMENT STUDY BE UNDERTAKEN.

c) WE WOULD RECOMMEND THAT SUCH A STUDY INCLUDE THE AREAS WE HAVE IDENTIFIED AS BEING POTENTIALLY UNDERSERVICED. THIS WOULD PERMIT THE EVALUATION OF THE STATISTICAL TECHNIQUES WE HAVE EMPLOYED HERE AS WELL AS THE DEVELOPMENT OF MORE ACCURATE PROJECTIONS IN TERMS OF THE ACTUAL QUANTIFICATION OF NEED.

It is, finally, worth noting that demand will increase over the next few years, simply on the basis of an expanding seniors population. Projections of demand in the future will, to a large degree, depend on firming up our current assessment of the degree to which Hamilton-Wentworth is under-serviced.

# RECOMMENDATIONS

Since this study was requested by service providers, the recommendations below are directed particularly to them.

We feel confident that a need for more meals is demonstrated in this study. In that regard, we would recommend:

1) SOMETHING ATTACHED [illegible] AS TO THE NATURE OF AT-RISK STATUS SO FUTURE REFERRALS MAY BE ASSESSED.

However, the nature of our study, with its unique use of prediction equations should be used only tentatively in making [illegible] for the provision of service with number of meals. This would best be done through a followup study.

a) WE WOULD RECOMMEND THAT A NEEDS ASSESSMENT STUDY BE UNDERTAKEN.

b) WE WOULD RECOMMEND THAT SUCH A STUDY INCLUDE THE AREAS WE HAVE IDENTIFIED AS BEING POTENTIALLY UNDERSERVICED. THIS WOULD PERMIT THE EVALUATION OF THE STATISTICAL TECHNIQUE WE HAVE EMPLOYED HERE AS WELL AS THE DEVELOPMENT OF MORE ACCURATE PREDICTIONS IN TERMS OF THE ACTUAL QUANTIFICATION OF NEED.

It is, finally, worth noting that demand will increase over the next few years, simply on the basis of an expanding seniors population. Projections of demand in the future will, to a large degree, depend on fleshing out the current assessment of the degree to which [illegible] is being [illegible].